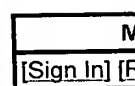
National
Library
of Medicine

All Databases

PubMed

Nucleotide

Protein

Genome

Structure

OMIM

PMC

Journals

Search

PubMed

for

Go

Clear

Limits

Preview/Index

History

Clipboard

Details

Display

Abstract

Show

20

Sort by

Send to

About Entrez

Text Version

Entrez PubMed

Overview

Help | FAQ

Tutorial

New/Noteworthy

E-Utilities

PubMed Services

Journals Database

MeSH Database

Single Citation Matcher

Batch Citation Matcher

Clinical Queries

Special Queries

LinkOut

My NCBI (Cubby)

Related Resources

Order Documents

NLM Catalog

NLM Gateway

TOXNET

Consumer Health

Clinical Alerts

ClinicalTrials.gov

PubMed Central

☐ 1: Int J Med Microbiol. 2004 Apr;293(7-8):483-90.

Related Articles, Links

Pathways followed by protein toxins into cells.

Sandvig K, Spilsberg B, Lauvrak SU, Torgersen ML, Iversen TG, van Deurs B.

Department of Biochemistry, Institute for Cancer Research, The Norwegian Radium Hospital, Montebello, Oslo, Norway.
ksandvig@radium.uio.no

A number of protein toxins have an enzymatically active part, which is able to modify a cytosolic target. Some of these toxins, for instance ricin, Shiga toxin and cholera toxin, which we will focus on in this article, exert their effect on cells by first binding to the cell surface, then they are endocytosed, and subsequently they are transported retrogradely all the way to the ER before translocation of the enzymatically active part to the cytosol. Thus, studies of these toxins can provide information about pathways of intracellular transport. Retrograde transport to the Golgi and the ER seems to be dependent not only on different Rab and SNARE proteins, but also on cytosolic calcium, phosphatidylinositol 3-kinase and cholesterol. Comparison of the three toxins reveals differences indicating the presence of more than one pathway between early endosomes and the Golgi apparatus or, alternatively, that transport of different toxin-receptor complexes present in a certain subcompartment is differentially regulated.

Publication Types:

- Review
- Review, Tutorial

PMID: 15149022 [PubMed - indexed for MEDLINE]

Display

Abstract

Show

20

Sort by

Send to

[Write to the Help Desk](#)[NCBI](#) | [NLM](#) | [NIH](#)[Department of Health & Human Services](#)[Privacy Statement](#) | [Freedom of Information Act](#) | [Disclaimer](#)

Jun 6 2005 07:23:23